

CLAIMS:

We claim:

1. A multi-protocol object distribution system comprising:  
a plurality of remote procedure call (RPC) transport protocol stubs; and,  
a meta-stub configured to select individual ones of said RPC transport protocol stubs through which distributed object services can be provided to requesting clients in the object distribution system.

2. The system of claim 1, wherein said RPC transport protocol stubs comprise:  
a default RPC transport stub, said meta-stub having a further configuration for automatically selecting said default RPC transport stub by default; and,  
at least one other RPC transport stub which said meta-stub can select based upon changing conditions in said object distribution system.

3. The system of claim 1, wherein at least one of said RPC transport protocol stubs comprises a simple object access protocol (SOAP) over hypertext transfer protocol (HTTP) stub.

4. The system of claim 2, wherein said default RPC transport protocol stub comprises a SOAP over HTTP stub.

5. The system of claim 3, wherein said RCP transport protocol stubs further comprises at least one other RPC transport protocol stub selected from the group

including a remote method invocation (RMI) over Internet Inter-ORB Protocol (IIOP) stub, a SOAP over Java Message Service (JMS)/Message Queue (MQ) stub, and a simple mail transport protocol (SMTP) over JMS stub.

6. In a multi-protocol object distribution system, a remote procedure call (RPC) processing method comprising:

receiving an RPC request for services from a distributed object in a server in the multi-protocol object distribution system;

establishing a communicative link with said distributed object using a default RPC transport mechanism, and querying said distributed object over said communicative link for other RPC transport mechanisms which are supported by said server;

selecting one said other RPC transport mechanisms and re-establishing said communicative link with said distributed object using said selected RPC transport mechanism; and,

processing said RPC request for services from said distributed object over said re-established communicative link.

7. The method of claim 6, further comprising:

detecting a deterioration in communications over said new communicative link;

further re-establishing said communicative link with said default RPC transport mechanism; and,

5 continuing to process said RPC request for services over said further re-  
6 established communicative link.

1 8. The method of claim 6, wherein said selecting step comprises:  
2 determining whether said requested service implicates asynchronous or  
3 synchronous messaging; and,  
4 selecting an optimal RPC transport mechanism supported by said server based  
5 upon said determination.

1 9. The method of claim 6, wherein said selecting step comprises:  
2 surveying network conditions; and,  
3 selecting one of said RPC transport mechanisms best suited to provide a pre-  
4 determined level of Quality of Service (QoS) in view of said surveyed network  
5 conditions.

1 10. A machine readable storage having stored thereon a computer program for  
2 performing remote procedure call (RPC) processing in a multi-protocol object  
3 distribution system, the computer program comprising a routine set of instructions for  
4 causing the machine to perform the steps of:  
5 receiving an RPC request for services from a distributed object in a server in the  
6 multi-protocol object distribution system;  
7 establishing a communicative link with said distributed object using a default  
8 RPC transport mechanism, and querying said distributed object over said

9 communicative link for other RPC transport mechanisms which are supported by said  
10 server;

11 selecting one said other RPC transport mechanisms and re-establishing said  
12 communicative link with said distributed object using said selected RPC transport  
13 mechanism; and,

14 processing said RPC request for services from said distributed object over said  
15 re-established communicative link.

11. The machine readable storage of claim 10, further comprising:  
detecting a deterioration in communications over said new communicative link;  
further re-establishing said communicative link with said default RPC transport  
mechanism; and,  
continuing to process said RPC request for services over said further re-  
established communicative link.

12. The machine readable storage of claim 10, wherein said selecting step  
comprises:  
determining whether said requested service implicates asynchronous or  
synchronous messaging; and,  
selecting an optimal RPC transport mechanism supported by said server based  
upon said determination.

1     13.     The machine readable storage of claim 10, wherein said selecting step  
2     comprises:  
3             surveying network conditions; and,  
4             selecting one of said RPC transport mechanisms best suited to provide a pre-  
5     determined level of Quality of Service (QoS) in view of said surveyed network  
6     conditions.

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